

1 **Amendment to the Claims**

2 **In the Claims:**

3 Please cancel Claims 43, 64, and 65.

4 Please amend Claims 27 and 39, and add new Claims 66 and 67 as follows:

5 1. – 26. (Canceled)

6 27. (Currently Amended) A device comprising:

7 an impaction plate,

8 a planar collection surface on the impaction plate,

9 a spotting nozzle for directing an air stream towards the collection surface, the air
10 stream passing through the spotting nozzle before impacting on the surface to form a spot of airborne
11 particles on the collection surface,

12 an analyzer configured to analyze the particles while the particles are retained on the
13 collection surface and the impaction plate remains in the device, the analyzer comprising an optical
14 detector that can analyze the particles as they remain on the collection surface,

15 a surface regenerator for regenerating the collection surface such that particles
16 collected before regenerating the collection surface are removed from the collection surface, and thus
17 are substantially no longer present to contaminate a spot of particles collected after regenerating the
18 collection surface, and

19 a homing sensor, wherein the homing sensor is a mechanical structure configured to
20 cyclically and automatically move the collection surface relative to the nozzle, the analyzer, and the
21 surface regenerator, movement of the collection surface being controlled such that in each successive
22 cycle a first portion of the collection surface will initially be adjacent to the nozzle, then adjacent to
23 the analyzer, then adjacent to the surface regenerator, and then adjacent to the nozzle once again in a
24 subsequent cycle.

25 28. (Original) The device according to claim 27 wherein the collection surface is smooth.

26 29. (Original) The device according to claim 27 wherein the spot is enriched in particles of
27 1-10 μm size range.

28 30. (Original) The device according to claim 27 wherein the analyzer is a fluorescence
29 detector.

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1 31. (Original) The device according to claim 27 wherein the analyzer is an infrared
2 absorbance detector.

3 32. (Original) The device according to claim 27 wherein the analyzer is a mass spectrometer.

4 33. (Original) The device according to claim 27 wherein the analyzer is a surface enhanced
5 Raman spectrometer.

6 34. (Original) The device according to claim 27 wherein the surface regenerator is a felt
7 wheel.

8 35. (Original) The device according to claim 27 wherein the impaction plate comprises a
9 plurality of collection surfaces.

10 36. (Original) The device according to claim 27 further comprising at least one particle
11 concentrator upstream of the nozzle.

12 37. (Original) The device according to claim 27 further comprising a size selective inlet
13 upstream of the nozzle.

14 38. (Original) The device according to claim 27 wherein the impaction plate is a lobed cam
15 having a shaft, the impaction plate comprises at least one planar collection surface substantially
16 parallel to the shaft, and the homing sensor comprises the shaft.

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1 39. (Currently Amended) A device comprising:
2 an impaction plate,
3 a planar collection surface on the impaction plate, said planar collection surface being
4 incorporated into the device,
5 a spotting nozzle for directing an air stream towards the collection surface, whereby
6 impact of the air stream on the surface forms a spot of airborne particles on the collection surface,
7 means for analyzing the particles while the particles are retained on the collection
8 surface and without removing the collection surface from the device, said means comprising an
9 optical detector that can analyze the particles while they remain on the collection surface,
10 means for regenerating the collection surface without removing the collection surface
11 from the device such that particles collected before regenerating the collection surface are removed
12 from the collection surface, and thus are substantially no longer present to contaminate a spot of
13 particles collected after regenerating the collection surface, and
14 means for translocating the collection surface relative to the nozzle, the analyzer, and
15 the surface regenerator.

16 40. (Previously Presented) The device according to claim 39 wherein the means of analyzing
17 the spot is selected from the group consisting of means for measuring biological, chemical, and
18 radiological properties.

19 41. (Original) The device according to claim 39 wherein the means of analyzing the spot is a
20 fluorescence detector.

21 42. (Original) The device according to claim 39 wherein the means for regenerating the
22 collection surface comprises a felt pad.

23 43. (Canceled)

24 44. (Original) The device according to claim 39 further comprising at least one particle
25 concentrator upstream of the nozzle.

26 45. (Original) The device according to claim 39 further comprising a size selective inlet
27 upstream of the nozzle.

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1 46. (Previously Presented) The device according to claim 39 wherein the impaction plate is a
2 lobed cam having a shaft, the impaction plate comprises at least one planar collection surface
3 substantially parallel to the shaft, and the means of translocating comprises the shaft and a prime
4 mover incorporated into the device.

5 47. – 56. (Canceled)

6 57. (Previously Presented) A device comprising:
7 an impaction plate,
8 a planar collection surface on the impaction plate,
9 a nozzle for directing an air stream towards the collection surface, whereby impact of
10 the air stream on the surface forms a spot of airborne particles on the collection surface,
11 a pre-analysis spot preparation station,
12 an analyzer for examining the particles while the particles are retained on the
13 collection surface and the impaction plate and collection surface remain in the device,
14 a surface regenerator capable of removing the deposit from the surface after analysis
15 such that particles collected before regenerating the collection surface are removed from the
16 collection surface, and thus are substantially no longer present to contaminate a spot of particles
17 collected after regenerating the collection surface, and
18 a homing sensor, wherein the homing sensor is configured to automatically and
19 operatively position the collection surface relative to the nozzle, the analyzer, and the surface
20 regenerator, the homing sensor comprising a prime mover configured to provide a motive force to
21 operatively position the collection surface relative to the nozzle, the analyzer, and the surface
22 regenerator.

23 58. (Original) The device according to claim 57 wherein the surface comprises pyramid-
24 shaped structures of about 1-10 μm in height and width.

25 59. (Original) The device according to claim 57 wherein the surface regenerator comprises a
26 regenerator nozzle for blowing air towards the collection surface.

27 60. (Original) The device according to claim 57 wherein the impaction plate is a lobed cam
28 having a shaft, the impaction plate comprises at least one planar collection surface substantially
29 parallel to the shaft, and the homing sensor comprises the shaft.

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1 61. (Original) The device according to claim 57 further comprising at least one particle
2 concentrator upstream of the nozzle.

3 62. (Original) The device according to claim 57 further comprising a size selective inlet
4 upstream of the nozzle.

5 63. - 65. (Canceled)

6 66. (New) A device comprising:
7 an impaction plate,
8 a planar collection surface on the impaction plate, said planar collection surface being
9 incorporated into the device,
10 a spotting nozzle for directing an air stream towards the collection surface, whereby
11 impact of the air stream on the surface forms a spot of airborne particles on the collection surface,
12 means for analyzing the particles while the particles are retained on the collection
13 surface and without removing the collection surface from the device,
14 means for regenerating the collection surface without removing the collection surface
15 from the device such that particles collected before regenerating the collection surface are removed
16 from the collection surface, and thus are substantially no longer present to contaminate a spot of
17 particles collected after regenerating the collection surface, and
18 means for translocating the collection surface relative to the nozzle, the analyzer, and
19 the surface regenerator, said means for translocating the collection surface comprising a shaft
20 attached to the impaction plate, wherein rotation of the shaft by a prime mover incorporated into the
21 device at predetermined angles operatively positions the collection surface to the spotting nozzle, the
22 means for analyzing the spot, and the means for regenerating the collection surface.

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1 67. (New) A device comprising:
2 an impaction plate, wherein the impaction plate comprises a lobed cam having a shaft,
3 and at least one planar collection surface substantially parallel to the shaft,
4 a spotting nozzle for directing an air stream towards the collection surface, the air
5 stream passing through the spotting nozzle before impacting on the surface to form a spot of airborne
6 particles on the collection surface,
7 an analyzer configured to analyze the particles while the particles are retained on the
8 collection surface and the impaction plate remains in the device,
9 a surface regenerator for regenerating the collection surface such that particles
10 collected before regenerating the collection surface are removed from the collection surface, and thus
11 are substantially no longer present to contaminate a spot of particles collected after regenerating the
12 collection surface, and
13 a homing sensor, wherein the homing sensor is a mechanical structure configured to
14 cyclically and automatically move the collection surface relative to the nozzle, the analyzer, and the
15 surface regenerator, movement of the collection surface being controlled such that in each successive
16 cycle a first portion of the collection surface will initially be adjacent to the nozzle, then adjacent to
17 the analyzer, then adjacent to the surface regenerator, and then adjacent to the nozzle once again in a
18 subsequent cycle, such that said shaft is part of the homing sensor.